

Synergy Effect Textile Clusters of Uzbekistan

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Abstract - The article highlights the role and importance of clusters in the development of the textile industry, as well as features of the formation and strategy of clustering. A method of calculating the socio-economic efficiency of forming clusters in the textile industry is proposed. The process of developing and implementing a clustering strategy by the association “Uztextileprom” has been analyzed, scientific proposals and practical recommendations have been developed to eliminate the existing problems.

Key words: Textile industry, marketing strategy, cluster, cluster formation, cluster trends, Synergy effect of clusters, multiplier, accelerator.

I. INTRODUCTION

The textile industry is a key provider in supplying basic commodity incomes to the country's supplier of goods, to meet the demand of the population for consumer goods, as well as for the development of other industries along with improving the culture of living.

Textile, spinning, sewing, knitwear, footwear and silk industries in the Republic of Uzbekistan is operating 10000 large and small enterprises, more than 400 joint ventures. The textile industry have a 150 thousand worker's.

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Decree of the President of the Republic of Uzbekistan of December 14, 2017 “On measures to further deepen reforms and expand the export potential of the textile and garment and knitwear industry” following “Implementation of the development cluster model, which envisages the integration of production, starting from the production of raw cotton, starting processing, subsequent processing of the product at the cotton-ginning plants and the production of finished textile products with high added value” [1] and important tasks were identified.

As we know, Implementation of the industrialization clustering strategy is a key focus of an innovative marketing approach that enables enterprises to effectively integrate. Over the years, research has been expanding and research has been undertaken in a number of areas, focusing on cluster formation and their impact on economic development.

II. LITERATURE REVIEW

As the experience and practice of clusters in foreign countries are known, clusters are mainly formed in the following directions:

Firstly, these are protoclusters of the type of Italian “industrial districts”, where a high concentration of small firms constitutes a competitive alternative to large corporations, including in export markets [2]. They originated in the industrial era, are poorly structured and designed only for incremental (improving) innovations - the result of reliance exclusively on informal connections and unique local resources.

The second direction is “industry clusters”, they are the cluster form of a centralized management system (centralized organizations) that create concentric circuits. Such industrial clusters include scientific lobbying, research centers and higher education institutions. Cluster shapes are reflected in Japanese, South Korean, German and French experiments. They have very strong partnerships and internationally-formally formal internal relations for international markets. The key features of such clusters are the disintegration of the innovative activity and the absence of linear linkage. Each cluster participant has a chain link to the system's

management hardware, which is the key to ensuring mutual integration. The fact that such a cluster is based on more financial resources encourages government intervention, but also encourages its participation as the primary financial provider [3]. This way of forming a cluster, although the government's support and the size of its financial resources are a weak part of its organization, are seen as a major tool or strategy for increasing competitiveness in the international market.

Third, these are innovative clusters of the post-industrial era — sustainable cross-link ecosystems formed in the form of triple helixes (clusters of Scandinavia, Switzerland, a number of well-known cluster networks in the USA, some clusters in Southeast Asia). They are integrated into global chains, have coordinating network nodes, build interactions on a relational contract and collectively generate interactive innovations. It is this model that achieves dynamic self-development, successfully fulfilling the functional task of the cluster - to become a growth pole for the region of dislocation [4]. The key aspect of the three-helical spiral clustering model is the emphasis on innovation and the main goal is to provide competition by scattering the innovation created by the participants [5].

The above-mentioned cluster development guidelines were designed to be appropriate in the context of Uzbekistan, based on the current state of textile enterprises and on the basis of market competition. In the long run, the main way to increase the competitiveness of light industry enterprises is the efficient use of cluster stereotypes, and at the present time there are sufficient conditions for use in the textile industry of the republic.

I. Ansoff considers the cluster “as an object of synergism”, then H. Itami defines the separate organization of the cluster as an object of synergy, in particular, the use of its internal resources. H. Itami formulates: “The goal of synergy is the use of the “free rider” effect, when the resources accumulated in one part of an industrial cluster are used simultaneously and without any additional expenses by its other parts.” He introduces the concept of “invisible assets”, “complementary” and “synergistic” effects. This author in the structure of the organization’s resources include: “people, financial assets, tangible assets, invisible assets” [6].

In 1926, J. H. Smuts introduced such a concept as holism [7]; it is based on the process of creative evolution, which creates new wholeness. If we translate into the functioning of a cluster, then the basis for the formation of a synergistic effect is its innovative activity.

Since innovation is the first in obtaining a synergistic effect of a cluster, the approximation of the value of the additional utility of an existing object to the value of the overall utility of this object allows to obtain a large value of the synergistic effect of the cluster [8].

Performing activities to create clusters is a complex process and requires a lot of costs. Clustering results are based on the interconnection of existing companies and the introduction of innovative services to the overall synergies of the overall development of the textile industry, the expansion of export opportunities, and the development of innovative activities.

III. METHODOLOGY

From the economic point of view, the synergy effectiveness of the cluster is an additional benefit from the interaction of two or more companies that are part of it and the relationship between innovative service providers. In other words, the effectiveness of the cluster-generated operations results is higher than the aggregate economic impact of each enterprise.

Scientific literature has different types of synergies, as follows[8]:

Sales Synergism - it manifests itself when a company, realizing several goods, uses the same distribution channels, carries out sales management through one center, uses the same storage space;

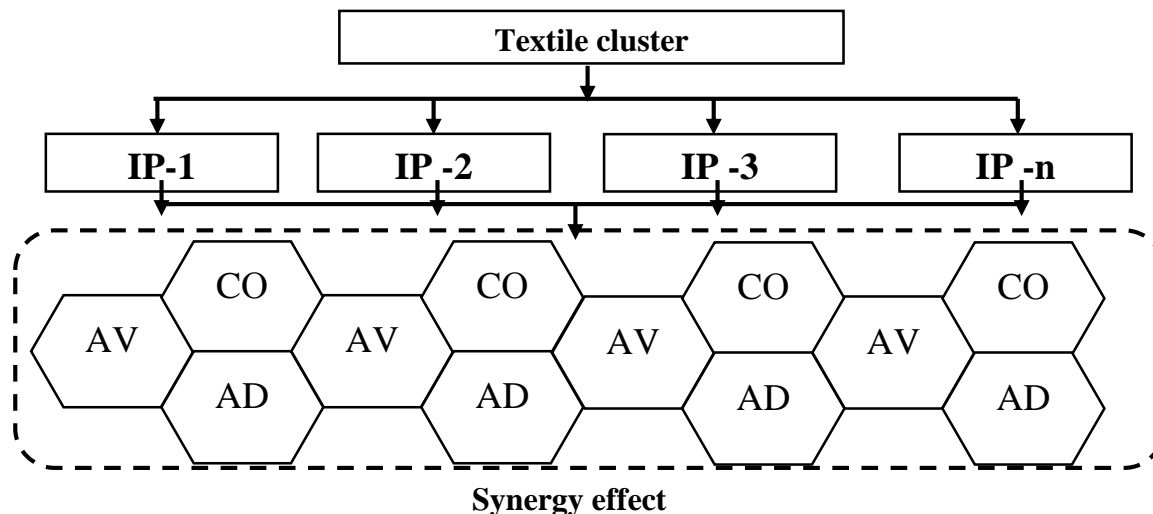
Operational synergism. Is the result of more efficient use of fixed and current assets, labor, distribution of overhead costs, etc.

Investment synergism. This type of synergy is a consequence of the sharing of production capacity, total stocks of raw materials, transfer of research and development expenses from one product to another, use of the same equipment, etc.

Management synergy. The effect of management synergies is manifested at the time of developing new products or entering a new industry.;

Functional synergism. In this case, the synergy effect arises from the cooperation of several enterprises, each of which has its own specialization. As a result of this cooperation, there is a reduction in the cost of production.

Informational synergism. В результате перетекания идей из одной области в дарытую и миграции кадров вознеете перенос информации, которую можно испыоловать в различных сферах с целью достижения максимального эффекта



IP – innovative project; AD -accelerating development. AV – added value; CO – cost optimization;

Fig.1: The process of forming the synergistic effect of the textile industry clusters

In general, synergy efficiency is a direct consequence of effective integration of the cluster effectiveness, ie, the result of effective integration of overall management, research and development, marketing and operational activities.

Textile factories need financial resources, skilled workforce and lobbying equipment equipped with high technologies to build products, technology and marketing innovations and do not have the capability to consolidate them into small businesses. In turn, the merger of enterprises in the cluster to produce the final product provides the capabilities and the synergy effect is achieved through the spread of innovations in the cluster.

In the research, the hypothesis of studying the effects of industrial clusters on socio-economic development is based on the multiplier effect of the relationship. That is, the narrow geographical position of industry sectors in a country's economy, and the proximity and durability of the relationships provide a high degree of multiplier effect,[9] while interconnectivity is a continual increase in revenue and the expansion of cooperation between the sub-sectors [10].

How multiplytor effects are discovered? The only organization that does not have any production processes, new products, or other activities will not always have the option. The financial and financial capacity of the enterprise is not always available. In this process, if the acquisition of a new product depends on the material costs, the partner company needs to use this technology more abundantly. Thus, the creation of a new product by two partner companies creates a certain amount of additional value and is assessed as the result of the cluster multiplier. The generated value reflects the cost savings required for the production of the same product separately from both enterprises, and is always higher than the recoverable yield. However, the multiplier effect produces an accelerator effect. The synergistic effect of the clusters is based on the interaction of the multiplicative and accelerator interactions.

The basis of building a system of indicators for assessing the synergistic effect obtained from the functioning of an industrial cluster should be based on key concepts proposed by I. Prigogine As a result, the synergistic effect depends on[8]:

1. M values (synergistic effect multiplier);
2. A values (accelerator synergistic effect);
3. C values (clustering level).

As a result, a multiplicative model is formed:

$$Se = M*A*C; \quad (1)$$

Table 1 presents the mathematical interpretation of the proposed model for calculating the synergistic effect of SeMAS.

Table-1: The synergistic effectiveness of the cluster [8]

Indicators	Abbreviation	Formula	transcript
Synergistic effect	Se	$Se = MAC$	Bc - consolidated cluster revenue in the current period; B _{c-1} - cluster consolidated revenue in the previous period; I _{R&D} - R&D expenses; Ic - cluster investment in the current period
Synergistic multiplier effect	M	$M = Bc / Ic$	
Synergy Accelerator effect	A	$A = I_{R\&D} Ic$	
Cluster level	C	$C = Bc / Bc - 1$	

The effectiveness of synergy effectiveness is considered to be the coefficient of growth of innovation. [10].

A feature of the model for calculating the synergistic effect of EMAS is the absence of a linear relationship. This is due to the complex structure of the organizational structure of the cluster, the multitude of heterogeneous organizations included in the cluster, and the fact that innovation is theoretically unpredictable at the center of the implementation of such a cluster.

IV. ANALYSIS AND RESULTS

Based on the synergy effectiveness methodology, the results of the relationships between enterprises and the various innovative services providers in the field of production are synergistic.

The establishment of engineering and design and fashion centers for textile enterprises will enable technological innovations.

Based on the proposed methodology, we define synergistic effects of the integration of light industry enterprises for 2005-2016 (Table 2).

Table-1: The effectiveness of the synergy of textile industry enterprises in 2005-2016

Indicators		2005 y.	2006 y	2007 y.	2008 y.	2009 y.	2010 y.	2011 y.	2012 y.	2013 y.	2014 y.	2015 y.	2016 y.	2017 y.
Gross Income of the Light Industry, billion sum	Y ₁	120,45	145,0	152,1	168,2	198,5	349,8	484,6	635,8	683,5	867,9	1030,3	1473,2	1630,4
Attracted investment, billion sum	Y ₂	3,8	5,9	12,3	43,5	14,6	20,4	37,5	39,3	54,5	52,6	47,3	416,0	100,0
R&D expenses, billion sum	Y ₃	0,001	0,016	0,015	0,02	0,034	0,105	0,044	3,8	7,296	1,8	0,9	3,4	3,064
Synergistic effect	C	0,008	0,080	0,016	0,002	0,037	0,156	0,021	2,058	1,805	0,726	0,472	0,041	0,552
Synergistic multiplier effect	M	31,697	24,576	12,366	3,867	13,596	17,149	12,922	16,177	12,541	16,500	21,783	3,541	16,297
Synergy Accelerator effect	A	0,000	0,003	0,001	0,000	0,002	0,005	0,001	0,097	0,134	0,035	0,018	0,008	0,031
Cluster level	K	1,000	1,204	1,049	1,106	1,180	1,762	1,385	1,312	1,075	1,270	1,187	1,430	1,107

Source: author`s calculations.

According to the results of the calculations, the effectiveness of synergistic effect of light industry enterprises and enterprises providing innovative services to them in 2012-2016 is the result of increasing their innovation costs. The synergy effectiveness was low due to the decline in the cost of light industry in the region in the years 2014-2015.

In 2016, light industry enterprises in Namangan region invested 3.4 billion soums in technological, organizational and marketing innovations, but the investment volume almost doubled. This, in turn, resulted in the synergist effect in 2016 dropping to the coefficient of 0.041.

The launch of the design and fashion centers serving the light industry enterprises in the short run (2013) has led to an increase in the efficiency of innovative activities.

This effect is formed on the basis of a causal relationship, when each subsequent link in the chain gives rise to a certain number of new links that form particular effects of multiplicative-accelerated synergy (internal synergy).

In turn, the combination of private effects forms a general effect of multiplicative-accelerative synergy (external synergy). The beginning of the SeMAS effect is the idea of innovation, realized through the potential of the cluster.

V. CONCLUSION

Cluster projects, which are being implemented in the regions of the Republic, are expanding the possibilities for integration of textile enterprises, farms, oil and fat sectors in the regions.

The cluster projects, which will be implemented by the Association "Uztokimilkilsanoat" in 2018-2021, will be 30 units, and in 2018 15 clusters will be launched and will be 283,000 hectares. land is allocated. It is expected that by 2019 the number of cotton-fiber clusters in the country will increase by 61 and the level of processing of cotton fiber will increase by 51% and 78% by 2020 [10].

The following conditions have been met for the initiators of the cluster industry in the textile industry:

the right to independently allocate selection varieties of cotton;

introduction of procedures for the purchase of agricultural machinery, mineral fertilizers, fuel oil and other materials on the terms stipulated for farms;

customs and tax incentives for imported machinery, mineral fertilizers and other materials;

the right to oil-fat-and-oil enterprises on the basis of the return of cotton seeds and subsequent sale of oil and fat products through exchange trades;

right to sell additional products to domestic consumers or directly to sell them;

allocation of funds for the financing of farms selling the raw cotton from the Fund at a rate not exceeding 3 per cent per year;

the opportunity to purchase buildings and grains located at the territory of the cotton gardens located on the territory of the Republic of Uzbekistan for a period of 5 years;

These circumstances will increase clusters' synergies effectiveness and increase access to further development of textile, agricultural, transport and communications industries in the country.

The above analytical outcomes should create a framework for the implementation of cluster initiatives, its structural subdivisions and fundamental methodological frameworks to form clusters. Systematic analysis of the principles of modern clusters and the principles of interaction in the cluster indicates that the relationship between economic cluster participants is an important tool. Effective integration of cluster participants creates specific advantages such as simplification of use of technologies, sharing of risk in different forms of joint economic activity, organization of joint scientific research, sharing of knowledge and basic funds.

The lack of experience of the initiators of the cluster projects on cotton production, and the lack of agricultural staff, suggests that the quality of solutions should be based on the hierarchical principle as a mechanism of interaction between producers and farmers. It is best to use sub-tectonic schemes widely used in the economy. Based on subcontract schemes, clustering creates mutual support and collaborative learning systems that will ultimately contribute to the development of new types of products and infrastructure.

The main condition and component of the effectiveness of cluster structures is the functioning of scientific and educational centers as clusters. In the formation of the organizational structure of the cluster projects in the country, these subjects are not paid enough attention. In this regard, first of all we believe that the clusters should be able to work within the framework of the existing capacity building structures, which train staff for their scientific and innovative development.

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